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ABSTRACT

This document offers a brief introduction to electronic commerce (known as eCommerce) and explains the challenges and frustrations of developing a course around the topic. ECommerce blends elements of computer science (HTML and JavaScript programming, for example) with traditional business functions, such as marketing, salesmanship, finance and accounting, to create a new academic discipline. Challenges include: (1) melding aspects of two disciplines into one without duplicating either; (2) identifying and dispelling common misconceptions; (3) placing boundaries around a very dynamic topic; (4) defining local business needs; and (5) making the results meaningful. The course described is offered in day, evening and online sections. Content is divided as follows: new and traditional marketing (40%); HTML and Front Page programming (40%); current telecommunications (10%); and good Web page design (10%). Class projects were designed to stimulate student interest in current issues (such as concerns about taxation and privacy) and required development of an original Web site design with an eCommerce business plan. The document concludes with recommendations for eCommerce course developers. (Contains 3 figures and 23 references.) (PGS)

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ECommerce: Meeting the Needs Of Local Business With Cross-Departmental Education

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ECommerce: Meeting the Needs of Local Business
With Cross-Departmental Education.

Professor John P. Sagi
Anne Arundel Community College
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Electronic commerce is a new and rapidly evolving topic. A few minutes on the evening news and those "dot-coms" will certainly be mentioned…the successes and the latest failures!

Some view eCommerce as an extension of marketing. Others see it as an entirely different aspect of business, a vital part of the "New Economy". Nonetheless, eCommerce instruction is in great demand by both local business and by the "Net-Generation" student population.

Several schools have excellent classroom and online courses. Among them are George Washington University, UCLA, Stanford, Penn State and NC State. However, few if any community colleges offer the topic.

This paper draws from the author's experience developing and teaching several classes in eCommerce both in the traditional classroom and online. It provides a brief introduction to eCommerce and then explains the challenges and frustrations of developing a course around the topic. It also contains a recommended readings bibliography to prepare the new instructor for this dynamic topic.

This paper augments a presentation of the same title given during the Conference on Information Technology sponsored by the *League for Innovation in the Community College,* Anaheim, CA November 2000

Background

The challenges in developing an eCommerce course include

- Melding aspects of two disciplines into one without duplicating either.
- Identifying and dispelling common misconceptions.
- Placing boundaries around a very dynamic topic.
- Defining local business needs.
- Making the results meaningful.

ECommerce is defined as the buying and selling of goods and services to business and non-business consumers, using electronic transactions within an organization. (Turban et al, 2000). However, there are other definitions, an example of the fluidity of this emerging field.

The course blends two distinct and well-defined disciplines, "electronics" and "commerce". Elements of computer science (HTML and JavaScript programming, for example) are joined with traditional business functions such as marketing, salesmanship, finance and accounting to create the new academic discipline. Elements of still other disciplines are also involved, including artistic design and 3D graphics.

Such a course also requires the understanding of the topic from the business lens. *Yet the topic is often misleading and prone to false assumptions*. For example, few if any Internet sites today are profitable. The Web is US-centric. First-movers, so important to business development, are not as important in eCommerce. The Web, from a knowledge viewpoint, is relatively small. And finally, the amount of commerce being done on the Web is small compared to global commerce.

Businesses are attracted to the Web because of its ubiquitous permeation of our society, the relative ease of entry, and the global extent of the Web. Making this possible are several technological innovations, including the microprocessor, the high speed connectivity of the Internet, cell phones, standards, educated workers and the positive support of the government. Included in this latter are a policy of non-interference, a proactive stance of telecommunications privatization, and support of technology consortia to promote research and development. These are often called the *engines* of the New Economy.

Studies have shown that the average Web user has six different online sessions per week, visits six unique sites during each session, views 33 different pages per session, spends over 3 hours per week on the Web and can be very impatient with sites that take a long time to load. (*Business 2.0*, June 13, 2000)

Over half of all small businesses claim a web presence. This may extend from simple eMail to sales catalogs and interactive sites. One in three sell on the Web. One in five buy on the Web. Only one-fourth has seen any revenue from the Web. (*The Industry Standard*, July 31, 2000)

An entire cadre of businesses has grown around eCommerce. These include

- Application Service Providers (ASPs) to host applications,
- Connectivity sites such as *AOL*
- Business to Consumer sites (B-2-C)
- Internet Service Providers (ISPs) allowing dial up and cable access
- Business to Business (B-2-B) sites such as *Oracle*
- Destination sites as *Yahoo*
- Consumer to Consumer (C-2-C) sites such as *eBay*

These are evident in the eModel, Figure 1, developed to explain to students and businesses the many nuances apparent in business Web sites. It shows that sites may be differentiated on the basis of the *ePlayers*, the extent of *eParticipation*, the form of *eProduct* and the kind of *eStore*.

----------Insert Figure 1 ----------

ePlayers include businesses, consumers and government. Their combinations, B-2-B, B-2-C, B-2-G, C-2-C and C-2-G distinguish them in this category. *eParticipation* ranges from simple Web display to interactive connectivity. User feedback and communication are becoming increasingly important to business. *eProduct* can be pure bits such as music and information, to shippable material that involves a distribution and a return channel. The *eStore* can be a "pure"

web store or a website associated with a "brick and mortar" store. The latter are becoming more successful in eCommerce than pure web stores.

We have observed that the *eStore* category can be further subdivided into *Direct Sales*, *Intermediary Sales* and *Click & Mortar Sales*.

ECommerce has introduced new marketing variables. The traditional *Marketing Mix* of Price, Product, Place and Promotion, has been augmented if not supplanted by the concerns of Content and Value, Communication and Community, Completeness and Competitiveness.

Author Don Tapscott (*Being Digital*, *Digital Capital* among others) developed several themes to act as a guide for eCommerce businesses. Among these themes is disintermediation - the possible elimination of the "middle man" such as the salesman. This issue, as well as more social issues of web taxation, intellectual capital, personal privacy and consumer access all must be addressed in eCommerce.

The course also involves a technology that is changing rapidly. Web languages such as HTML and XML, web rules such as the Internet Protocol (IP) and the Wireless Protocol (WAP), and new forms of connectivity such as Bluetooth, must be addressed.

Course Development

ECommerce will frustrate and challenge both the instructor and the student. The student expecting a marketing course will be less receptive to several hours of web page design exercises and HTLM coding. However, the computer science student who is willing to delve into dynamic hypertext and develop superb web sites is more understandably reluctant to memorize the Marketing Mix and to analyze profit methods of web sites.

Content is approximately divided as follows:

- New and Traditional Marketing 40%
- HTML and Front Page 40%
- Current Telecommunications 10%

- Good Web Page Design 10%

Thus the course is placed on the continuum approximately between Marketing (business) and HTML (technology). Existing courses adequately covered the extremes.

---------- Insert Figure 2 ----------

Figure 2 shows the classroom content, which differs from the online course as shown in Figure 3, due to the software available in the classroom. The classroom student is able to develop web pages under supervision. While not diluting the subject matter, the online student focus in technology centers around planning for an online presence by investigating services available in the students' area and developing a plan to implement the site.

---------- Insert Figure 3 ----------

The course is offered in day, evening and online sections. Student age and experience vary broadly but tend to be homogenous within the sections. That is, most day students are younger, with little management experience. Evening students are active experienced managers. However, despite the experience, most evening students have never learned HTML, nor have taken a marketing course.

The first course was actualized from a marketing viewpoint, with an "eMarketing" text. While this was satisfactory, the focus on marketing often precluded more technical topics such as security and web payment systems. The course was subsequently refined to increase the technology aspects.

A scan of other online courses is important. Most are on the graduate level. The curricula should be examined for content and projects, and modified for the appropriate student level. There may be no adequate texts for the selected mix of business and technology.

Local businesses should be consulted for their current web presence, their eCommerce capabilities and their projected needs. However, we found the value of their insight limited.

Most local businesses had email; several had a simple web site. Few were taking advantage of the web potential. These businesses needed both a direction and the skills to develop or implemcnt the sites. Several became evening students. Most important to the local businesses were instruction in planning for a larger presence; and technology information such as the best local ISPs and the value benefits of the many feedback options.

Course projects, to be meaningful, must designed to use the web, to challenge the broad experience level of the students, and require students to write. Projects might include

- Describing favorite sites (to determine good or bad web design).
- Locating sites that may generate funds in different ways.
- Interviewing business owners with web presences.
- Using HTML and creating several web pages.
- Investigating ISP charges and services.
- Creating and determining the availability of applicable domain names.
- Using Front Page as a Web authoring tool.

A major in-class project that was very successful was the creation and execution of a survey of business students to determine opinions about various issues of web use and eCommerce. Students researched current issues, formulated questions and created a survey. The survey was delivered to several business classes. Almost 200 responses were tabulated and analyzed by the instructor using SPSS. This activity was beneficial in several ways. It encouraged

students to become more familiar with current issues such as concerns about taxation and privacy, while making them curious about the web use of their peers. The results were compared in many ways, including isolating eCommerce students from other business students and were often surprising. (Sagi, 2000) Among them:

- ECommerce students tended to be more strongly opinionated.
- Those who had made Web purchases tend to see the web as safe for credit cards use.
- Almost 70% of respondees felt motivated to buy after downloading music.
- Most prefer to buy from a store.
- Most expect cheaper prices on the web.
- Web sites shouldn't t have the right to resell email addresses.

As a final project, classroom student groups develop and present their web site, using Front Page. They are allowed 15 minutes per group, and must address the web site from a business and from a technology standpoint. They must create an original and available URL, have a business plan containing the traditional Marketing Mix, a good web design, and a method of funds generation, among many other points.

Online students develop an online business plan throughout the course by means of activities. They are encouraged to combine them into a finalized plan for actual use.

Recommendations

Based upon the previous discussion, it is strongly recommended that eCommerce course developers take the following activities into consideration:

1. Determine where on the business-technology continuum the course will focus. This will be influenced by local businesses, student experience and school technology resources.

2. Know that a text may not be available. Choose one, several or none. We are considering writing a text supplement with cases and activities.
3. Accept that local businesses may need guidance, and may not provide much assistance. However, the opposite may also be true, that local business has the potential for becoming very pro-active.
4. Consider team-teaching, involving computer science and business faculties. Finding an instructor in business who knows web development may be difficult.
5. Develop several projects involving the web. Use web resources as much as possible.
6. Teach in a lab to permit continuous examples and student development.
7. Be conscious of existing courses. Don't compete or extensively overlap.
8. Draw from other resources such as eCommerce offerings from other institutions.
9. Expect to continually adjust the course based upon student interests, experiences and technology changes.
10. Evening students will have different interests in the course than daytime students. Identify them early and refocus the course.
11. Nurture a partnership with a business group. This may keep you current to business needs as well as provide a source for classroom speakers.
12. Encourage team projects, especially in web development. Some students are more skilled than others and will take the lead. The results have been surprising.
13. Don't overlook surveys as a means to promote interest in topic areas.
14. Investigate the courses being developed by the four-year institutions nearby, focusing on their issues. Then develop a niche, such as "excellent web development skills" or "profiting from a web page".

15. Become familiar with the subject matter by subscribing to the current eCommerce publications, such as *Industry Standard* and *Business 2.0*. Encourage students to subscribe to these, or read them online. Also become familiar with several of the texts in the bibliography for ideas and content.

The online course from Anne Arundel Community College is at http://ola.aacc.cc.md.us/bpa280. It contains many projects that may be adapted to the classroom. It is continuously under revision, and contains recommended links.

PowerPoint slides are available at http://www.aacc.cc.md.us/ectdjsagi/eCommerce.htm

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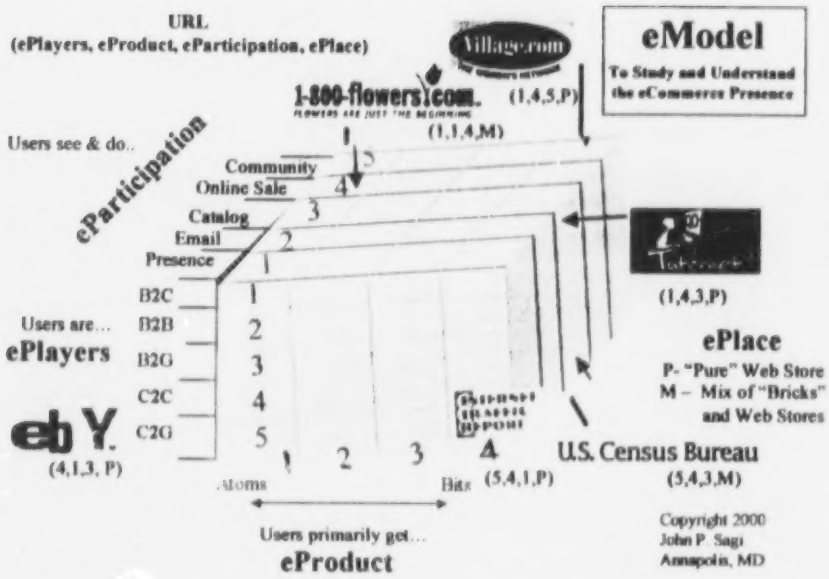

Figure 1

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Classroom Course Content

- Marketing Review - 4Ps
- New Economy
- eMarketing - 4Cs
- Management Issues
- PC Technology
- Internet and Web
- HTML
- Front Page
- Website Competition

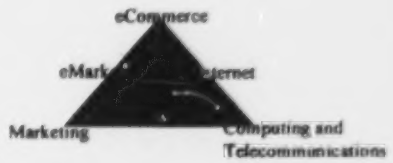

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Figure 2

On-Line Course Content

- Marketing Review - 4Ps
- New Economy
- eMarketing - 4Cs
- Management Issues
- PC Technology
- Internet and Web
- ISP Selection
- Web Citizen Projects
- Web Site Plan

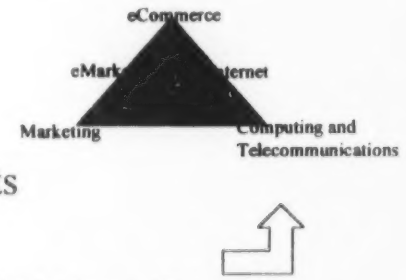

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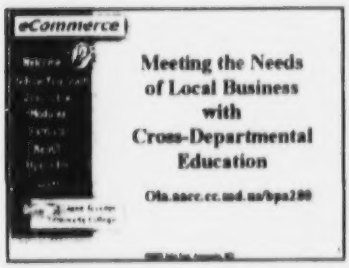
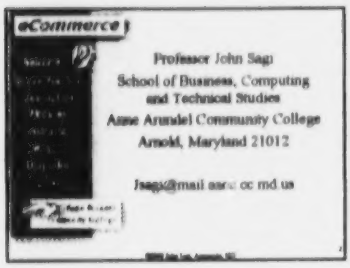
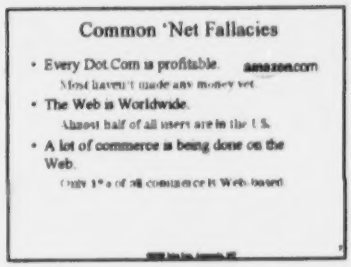
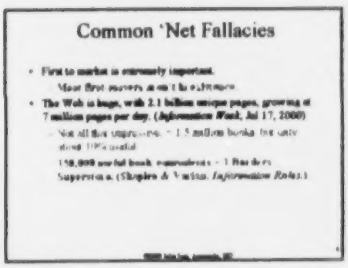
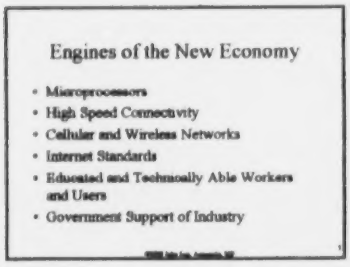
Figure 3

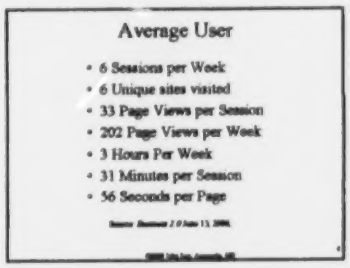


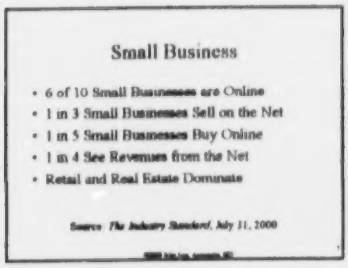


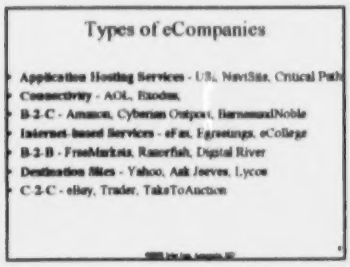

Common 'Net Fallacies
• Every Dot.Com is profitable. amazon.com
Most haven't made any money yet.
• The Web is Worldwide.
Almost half of all users are in the U.S.
• A lot of commerce is being done on the Web.

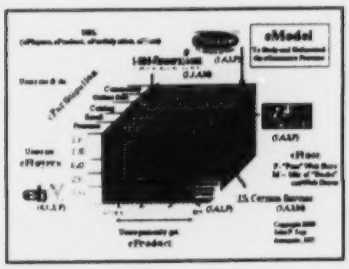

Common 'Net Fallacies
• First to market is extremely important.
• The Web is huge, with 2.1 billion unique pages, growing at 7 million pages per day. (Information Week, Jul 17, 2000)
150,000 new hit book equivalents - 1 Barnes Superstores. (Shapiro & Varian, Information Rules.)


Engines of the New Economy
• Microprocessors
• High Speed Connectivity
• Cellular and Wireless Networks
• Internet Standards
• Educated and Technically Able Workers and Users
• Government Support of Industry


Average User
• 6 Sessions per Week
• 6 Unique sites visited
• 33 Page Views per Session
• 202 Page Views per Week
• 3 Hours Per Week
• 31 Minutes per Session
• 56 Seconds per Page


Small Business
• 6 of 10 Small Businesses are Online
• 1 in 3 Small Businesses Sell on the Net
• 1 in 5 Small Businesses Buy Online
• 1 in 4 See Revenues from the Net
• Retail and Real Estate Dominate
Source: The Industry Standard, July 11, 2000


Types of eCompanies
• Application Hosting Services - UBL, NaviSite, Critical Path
• Connectivity - AOL, Exodus,
• B-2-C - Amazon, Cyberian Outpost, BarnesandNoble
• Internet-based Services - eFax, Egreetings, eCollege
• B-2-B - FreeMarkets, Ranerfish, Digital River
• Destination Sites - Yahoo, Ask Jeeves, Lycos
• C-2-C - eBay, Trader, TakeToAuction



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Traditional Marketing

- Price
  - Penetration, Skim, Leader, Follower
- Place
  - Store, Distribution
- Product
  - Goods, Services, Packaging
- Promotion
  - Ads, PR, Direct, Sales

New Marketing

- ✓ **Content and Value**
  Product, service, free information, consistency
- ✓ **Communication and Community**
  Connectivity, customer sharing, referrals
- ✓ **Completeness**
  Catalog, 1-stop satisfaction, repeats
- ✓ **Competitiveness**
  Fast, 3 clicks, fair value, reliable

A Dozen Overlapping *Themes* (Tapscott, 1996)

[illegible]

Web Issues

- Euro vs. US Internet Sales Tax (VAT)
- Protocol for Privacy Protection (P3P)
- Upper Level Domain Allocations (Trademarks, National Control)
- Intellectual Capital (Napster, MP3)
- Digital Divide (Haves, Havenots)
- Internet Access Fees (Per minute vs Open)
- Regional Morality (vs Global Citizenry)
- Data Ownership (Selling eMail addresses)

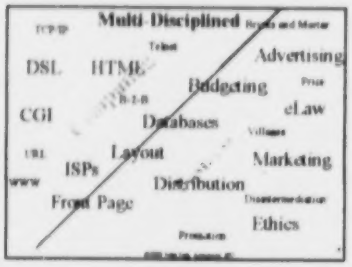
The Future Buzz

- ASP – Applications Service Provider
- XML – Extended Markup Language
- ERP – Enterprise Requirements Planning
- CRM – Customer-Relationship Management
- B2A – Business to Anyone
- WAP – Wireless Application Protocol
- WML – Wireless Markup Language
- Bluetooth
- E-signatures
- Pocket PC's

eBusiness
eCommerce
eMarketing
eGadd!

eCommerce
Me-Commerce
We-Commerce
G-Commerce
B-Commerce
C-Commerce
B-2-All

Multi-Disciplined



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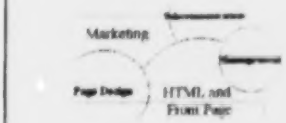
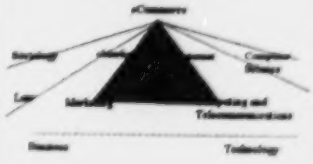


On the Continuum

On the Continuum



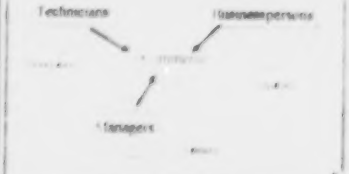
Student Demographics

	Age	
• Day	19	hourly workers
• Evening	>40	salaried managers
• Online	<40	salaried workers

The 19 Year Old Student is Part of the First Generation Coming of Age in the Digital Age... "N-Geners"

Don Tapscott,
CIT Conference, 16 Nov 2000

Different Business Focuses



Meeting the Needs...

- "I'll know it when I see it"
- "We needed it yesterday"
- "Yes we're using it: we have eMail"
- "Our business is local"
- "We have a web site but no one uses it"

Existing Related Courses

- Web Design
- HTML
- Perl
- eMarketing
- Front Page

Current Courses From Other Institutions

- George Washington University
- UCLA
- Stanford
- Penn State
- North Carolina State

Texts Considered

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Course Preps

- **Scan other Sites**
  What is being offered now? Where? What Levels? How?
- **Select a Text**
  What are the competencies? Levels?
- **Develop the On-Line Site**
- **Develop Projects, Exams**

Classroom Course Content

On-Line Course Content

Course Preps

- **Meet with Business**
  What are the needs?
- **Meet with Educators**
  What is being offered now?
- **Meet with Students**
  What is applicable?

Course Projects

- ✓Research Local Demographics
- ✓Describe Favorite Sites and Why
- ✓How a Site Generates Funds
- ✓Interview a Small Business
- ✓Research Good Site Design
- ✓Develop Using HTML
- ✓Develop Using Front Page

Development Strategy

- Find the Core Competencies
  - Experience, Texts, Projects, Courses
- Find a Competitive Strategy
  - Marketing, Mixed, Technology Focus
- Scan Other Offerings
- Put a Stake in the Water!

Development Strategy

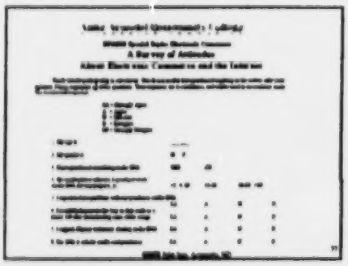
- Decide on the Platforms and Programs
  - Courses, Certificate, Degree, O/L, F/F
- Develop Interesting Projects
- Meet Local Needs
- Decide on the Text
- Develop the Curricula

Course Final Project

- Develop a Plan for Implementing an eCommerce Web Site

Or

- Develop or improve an eCommerce Web Site
- Sell an Item



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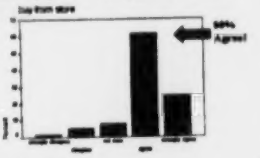
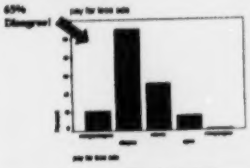
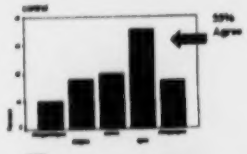
12. I surf the Web for product information, but I usually prefer to buy from a store.



44. I'd pay more for Web purchases if there were fewer ads.



9. The government should control the Web to better protect the consumer from fraud.



- ECommerce students tend to be more strongly opinionated than their business counterparts
- Those who have made a web purchase tend to see the web as safe for credit card purchases.
- 65% feel motivated to buy after downloading music. Most agree with Napster.
- The majority prefers to buy from a store, but get information from the Web.
- The users expect cheaper prices on the Web.
- Web sites shouldn't have the right to resell any information.

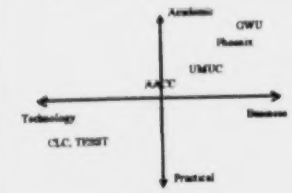
Issues

- Competing with existing courses
- Attracting the right students
- Promoting the course
- Deciding upon prerequisites
- Project applicability
- Marketing and Web design

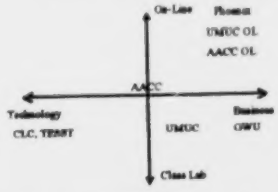
Training Challenges

- Age
- Experience
- Education
- Computer Skills
- Computer Labs
- Handouts

The "Different Focus, Different Program" Problem



The "Different Delivery, Different Program" Problem



Recommendations

- Stay Flexible with the Text
- Have an Instructor who knows both Technology and Business
- ...and/or Team Teach
- Develop a Partnership with Business
- Promote in the Community
- Teach in a Lab

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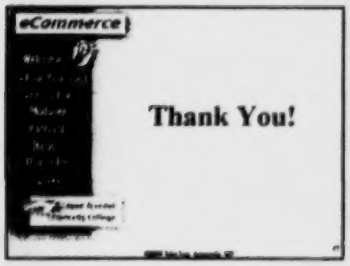

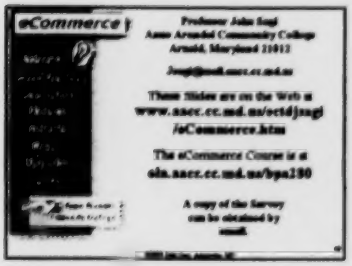

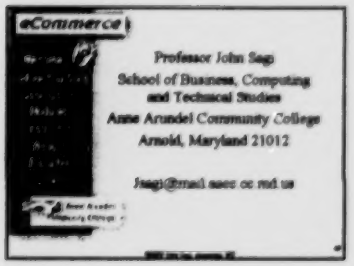

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